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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,734

02/21/2006

Pernille Baardseth

BAAR3002/REF

8554

23364 7590 08/19/2009

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EXAMINER

INYARD, APRIL C

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

08/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,734	Applicant(s) BAARDSETH ET AL.	
	Examiner APRIL C. INYARD	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This second non-final action is in response to the reply filed on 04/15/2009.
2. The Examiner acknowledges amendments to claims 6-7, cancellation of claims 1-4, and addition of new claims 10-12.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 5-12 are pending and have been considered as follows:

Claim Objections

5. Claims 5-7 are objected to because of the following informalities: the word, "French" should be capitalized whenever used as it is a proper noun. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claims 5-6 recite the limitations "part-cooked", however it is vague and indefinite as to what is meant by and/or encompassed by this term. Does part-cooked mean to a specific texture, temperature; or does it part-cooked mean that a portion of a piece of potato is cooked while another portion is not? Thus the scope of the claim is rendered indefinite.

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9. Claim 6 recites the limitation “physiologically acceptable acid”, which is indefinite because looking toward applicant’s specification, one of skill would not be able to ascertain what is “acceptable” and what is not “acceptable”, as Applicant’s provide a variety of known acids, however, there is no definition of what limits or levels are “acceptable”, and thus such terminology is relative and renders the scope of the claim indefinite.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **Claims 5-6 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaaber et al. (“Production of chips from potato cultivars (*Solanum tuberosum* L.) with high sugar content using lactic acid fermentation”, *Potato Research*, 38:39-45, 1995) as evidenced by Jung et al. (“A Novel Technique for Limitation of Acrylamide Formation in Fried and Baked Corn Chips and in French Fries”, *J. of Food Sci.*, 68:1287-1290; 2003), and Slinde et al. (EP 536851):**

Kaaber teaches a process of treating sliced potatoes involving the steps of fermenting sliced potatoes in a brine solution comprising a lactic acid producing Bacteria, *Lactobacillus*, and sodium chloride, followed by frying the potato slices in oil heated to 170°C in an Elframo EB cooking pan (*see Materials and Methods*, p. 40).

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Slinde provides evidence that deep fat frying is accomplished in an Elframo EB cooking pan (*p. 7, lines 38-40*).

Therefore, with regard to the prior art, the phrase “frying in an Elframo EB cooking pan” encompasses deep-fat frying, or French frying.

Further, with regard to the prior art, the phrase “lactic acid” encompasses a “physiologically acceptable acid”.

The recitation in the claims that the process is “for the preparation of French fried potatoes to reduce acrylamide production in subsequent cooking thereof” is merely an intended use. Applicants attention is drawn to *MPEP 2111.02* which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use then it meets the claim.

It is the Examiner’s position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use.

Given that Kaaber discloses lactic acid fermentation pre-treatment as presently claimed, it is clear that the process of Kaaber would be capable of performing the intended use, i.e. reducing the acrylamide production in the fried potato product, presently claimed as required in the above cited portion of the MPEP, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

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Further, Jung et al. provides evidence that the treatment of potato cuts in an acid solution for 1 hour before frying results in a 73-80% inhibition of acrylamide formation in French fries (*Abstract; Fig. 3 and related text*).

Therefore, given that Kaaber discloses treatment of the potato slices with a lactic acid solution for 24 to 48 hours before frying the fried potato slices will inherently have a reduction in acrylamide formation that is at least 38%, given the evidence that acid treatment for 1 hour results in a 73-80% reduction in acrylamide.

Thus, Kaaber meets the limitations of **Claims 5-6, 8-9, and 11-12**.

12. Claims 5-6 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaaber et al. as evidenced by Zyzak et al. (US Pub 2004/0058046, priority to provisional application 60/412307 filed 09/20/2002):

As discussed above, Kaaber teaches a process that meets the limitations of Claims 5-6, where the reduction of acrylamide by at least 38% in the fried potato pieces is inherent in the process disclosed by Kaaber.

Alternatively, Zyzak provides evidence that asparagine, a naturally occurring amino acid can form acrylamide when heated, and thus foods rich in asparagine, when heated tend to contain higher levels of acrylamide, which is particularly the case when asparagine-containing foods are heated in the presence of reducing sugars (*par. [0014]*).

Thus, as Kaaber teaches that lactic acid fermentation pre-treatment of potato slices significantly reduces the amount of reducing sugars in the potato slices, the reduction in acrylamide by at least 38% is inherent in the process taught by Kaaber.

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Further, as discussed above, with regard to the prior art, the phrase “lactic acid” encompasses a “physiologically acceptable acid”.

Therefore, Kaaber teaches a process that meets the limitations of **Claims 5-6 and 8-9**.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. **Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaaber et al. in view of Zyzak et al. (US Pub 2004/0058046, priority to provisional application 60/412307 filed 09/20/2002):**

Regarding **Claims 7 and 10**, Kaaber teaches a process of pre-treating potato slices with a lactic acid producing bacteria and/or a physiologically acceptable acid.

Kaaber does not specifically teach a container containing oven-ready French fried potatoes.

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However, Zyzak discloses that it is known in the art of making commercially available French fries with reduced levels of acrylamide to cut potatoes, treat the potatoes with a substance to reduce acrylamide formation, par-fry the potato pieces, followed by freezing, packaging, and storing the par-fries where they may be finished at a later time (*pars. [0107]-[0120]*).

The Examiner notes that frozen packages of French fries are sealed.

It would have therefore been obvious at the time the invention was made to one having ordinary skill in the art to modify the lactic acid fermented potato slices of Kaaber by par-frying and packaging the potatoes as is taught by Zyzak to be known in the art of producing French fries to make French fries with a lower content of reducing sugars and thus acrylamide commercially available.

16. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaaber et al. as evidenced by Jung et al.:

As discussed above, Kaaber teaches a lactic acid fermentation of potato slices which results in a lower content of reducing sugars, and thus acrylamide in French fries that meet the limitations of Claims 5-6 and 8-9.

Alternatively, Jung et al. provides evidence that treatment of potato cuts in an acid solution for 1 hour before frying results in a 73-80% inhibition of acrylamide formation in French fries (*Abstract; Fig. 3 and related text*).

The Examiner notes that the pH of the fermented potato slices taught by Kaaber is reduced from about pH 6.2 to about pH 3.8-4.8 after 24-48 hours of lactic acid fermentation (*Table 1*).

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Therefore, absent evidence showing otherwise, the lactic acid fermentation pre-treatment of potato slices taught by Kaaber will intrinsically reduce acrylamide in French fired potatoes by at least 38%.

Additionally, it is the Examiners position that all of the process parameters of Kaaber (lactic acid fermentation, temperature of fermentation, time of fermentation, frying temperature, frying time) are known result effective variables. If the lactic acid pre-treatment time is low it would result in a low reduction of reducing sugars as shown in Table 1 of Kaaber, and thus a lower reduction in acrylamide formation; and too much lactic acid pre-treatment would result in no added benefits, or no further reduction in reducing sugars and thus acrylamide formation.

Therefore it would have been obvious to one with skill in the art at the time of the invention to determine the optimal value for the lactic acid pre-treatment processing used in the process of Kaaber, through routine experimentation, to impart the potato slices with the desired properties associated with the lactic acid pre-treatment to result in a fried potato product with reduced acrylamide.

The optimization of a variable which achieves a recognized result through routine experimentation is considered to be within the level of ordinary skill in the art, see *MPEP 2144.05 II*.

Response to Arguments

17. The rejection(s) of claims 5, 7 and 8 under 35 USC 102(b) as anticipated by Hilton as evidenced by Porro have been withdrawn in view of Applicant's amendments.

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18. The rejection(s) of claims 6 and 9 under 35 USC 102(a) as anticipated by Gertz has been withdrawn in view of Applicant's foreign priority date of 09/24/2002.

19. Applicant's arguments with respect to the rejection(s) of claims 5 and 7-8 under 35 USC 103(a) as unpatentable over Kaaber have been considered but are moot in view of the new ground(s) of rejection.

Specifically, Applicant's argue on p. 6, that Kaaber is concerned with the problem of reducing unacceptable browning of sliced potato chips on frying with the specific intention of lowering the content of reducing sugars, whereas Applicant's invention is concerned with reducing the production of acrylamide on cooking French fries, and that none of the prior art contains any hint that there may be any link between lowering reducing sugar content and the reduction in acrylamide formation.

First, the Examiner points out in response to Applicant's arguments, the recitation "for the preparation of part-cooked French fried potatoes to reduce acrylamide production in subsequent cooking thereof" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). As stated in par. 7 of the office action dated 10/23/2008, the Examiner established that the claimed and prior art processes were identical and thus set forth a *prima facie* case of obviousness over the functional limitations derived from such a process. However, Applicant's argument that those skilled in the

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art would have no reason to believe that the lactic acid producing bacteria taught by Kaaber would have the effect of reducing acrylamide is not substantial evidence showing that the prior art products do not necessarily possess the characteristics of the claimed process.

Second, in response to Applicant's argument that the process of Kaaber does not specifically teach that acrylamide will be reduced upon frying of the potato slices, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The Examiner notes that as presently claimed, Applicant's process recites the intended use of the treatment, which is "for the reduction of acrylamide", where the evidentiary reference, Jung et al. (publication date of May 2003, prior to Applicant's effective US Filing date of 09/24/2003) is utilized as evidence that Kaaber's lactic acid fermentation treatment and subsequent reduction in pH is a process capable of reducing the amount of acrylamide formed upon subsequent frying of pre-treated potato slices.

Third, the Examiner points out that Zyzak (published in 2004, but with a filing priority date of 09/20/2002) discloses the link between acrylamide formation and reducing sugars, where greater acrylamide is formed on heating or frying food products containing asparagine and reducing sugars. Therefore, as Kaaber teaches that lactic acid fermentation significantly lowers the content of reducing sugars, the link between acrylamide formation and reducing sugars as disclosed by Zyzak renders it obvious to the skilled artisan that lowering the content of reducing sugars using the lactic acid fermentation treatment process of Kaaber will result in a lowered content of acrylamide in the fried potato product.

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Therefore, the argument that the teaching in Kaaber using a lactic acid producing microorganism to reduce acrylamide formation is not obvious is considered moot in view of the newly made rejections.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Willard (US Pat. 4,698,230) teaches that one of the organic acids naturally occurring in a potato is lactic acid (*Col 9, lines 37-39*). Therefore the skilled artisan would recognize that simply washing a cut potato slice in water could be considered to encompass treating a potato with a physiologically acceptable acid.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to APRIL C. INYARD whose telephone number is (571) 270-1245. The examiner can normally be reached on Monday - Thursday 8:00 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

APRIL C INYARD /A. C. I./
Examiner, Art Unit 1794